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(72) Inventors:
• **Schimmel, Marten Alberto**
7341 PB, Beemte-Broekland (NL)
• **Hermans, Wilhelmus Leonardus Peter Marie**
4132 CB, Vianen (NL)

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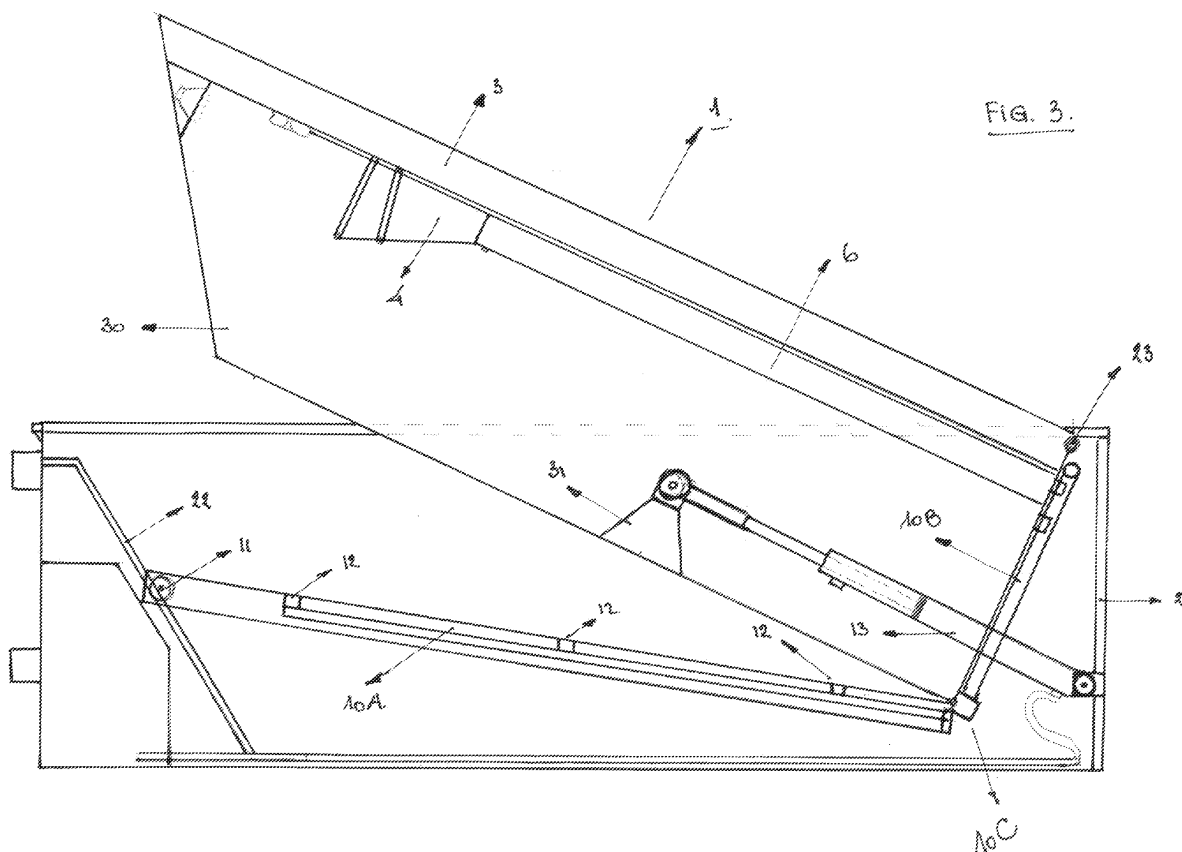
(74) Representative: **Mink-Lindenburg, Charlotte Hildegard et al**
Octrooibureau Mink B.V.
Twentepoort Oost 61-25
7609 RG Almelo (NL)

(71) Applicant: **Urilift Beheer B.V.**
7341 PB Beemte-Broekland (NL)

(54) **Pivotable public sanitary facility**

(57) The invention relates to a public sanitary facility (1), comprising a housing (2) intended for placing underground, and a wall (3) adapted to collect urine. The wall is mounted on the housing for pivoting between an un-

derground rest position and an above-ground position of use. The housing also comprises a floor (10A, 10B) which is movable between a rest position, in which the floor is situated in the housing, and a position of use in which the floor is situated substantially parallel to street level.



Description

[0001] The present invention relates to a public sanitary facility, comprising a housing intended for placing underground, and a wall adapted to collect urine, which wall is mounted on the housing for pivoting between an underground rest position and an above-ground position of use.

[0002] Such a sanitary facility is described in Netherlands patent 1032131 of applicant.

[0003] The known public sanitary facility can be placed ready for use as required in rapid, simple and safe manner. A temporary toilet facility can hereby be provided in public spaces without any permanent change to the street scene, whereby the problem of public urination can be solved satisfactorily.

[0004] In the retracted situation the known sanitary facility takes up only minimal space under the ground and can be placed at any location despite the possible presence in the ground of objects such as conduits for water or electricity.

[0005] The present invention relates to an improvement to the known public sanitary facility.

[0006] The public sanitary facility according to the invention has for this purpose the feature that the housing also comprises a floor which is movable between a rest position, in which the floor is situated in the housing, and a position of use in which the floor is situated substantially parallel to street level.

[0007] The movable floor has the significant advantage that in the position of use there are no longer any height differences between the surrounding level (referred to here with the term street level) and the walkable surface of the public sanitary facility according to the invention. This enhances safety for users, this being of great importance in public spaces.

[0008] In a first preferred embodiment of the public sanitary facility according to the invention the sanitary facility is adapted for simultaneous movement of the floor and pivoting of the wall. The public sanitary facility can hereby be placed into the position of use in one movement, and likewise disappear underground again in one movement. One central drive moreover suffices for the purpose of performing this movement, which saves production costs.

[0009] According to a practical development of this first preferred embodiment, the floor comprises at least two floor parts which are pivotally connected. A first floor part is provided with guide means, wherein a guide rail is arranged in the housing for guiding the guide means. A second floor part is mounted fixedly on the wall. According to this further development, the floor as it were co-displaces during the pivoting of the wall under the influence of the central drive. The floor is hereby embodied mechanically in robust and reliable manner and produces a surface which any user can walk on safely.

[0010] According to a further preferred embodiment, means for cleaning the sanitary facility are arranged in

the floor. These cleaning means co-displace with the floor during displacement between the rest position and the position of use. As a result the public sanitary facility according to the invention can be cleaned hygienically in reliable manner in a short period of time.

[0011] In a further preferred embodiment the floor is adapted such that it serves in the position of use as closing element of the housing. Using the floor the hollow housing is immediately covered and secured in the position of use.

[0012] In an elegant preferred embodiment the wall is provided with one or more walk-in positions, each with a receptacle for human excrement and/or urine, which is connected to a waste pipe for connection to a sewage system. The housing with one or more walk-in positions gives a user privacy, this being perceived as important in public spaces. Owing to the movable floor and the hollow housing, the space required for accommodating the one or more walk-in positions with receptacle can be created while the depth of the housing remains the same.

[0013] In yet another preferred embodiment one of the sides of the wall is situated during operation substantially parallel to street level in the underground rest position. In the rest position the public sanitary facility according to the invention is immediately covered and secured by means of the closing wall. The wall is preferably embodied so as to be passable for traffic. In the rest position the public sanitary facility can advantageously be integrated inconspicuously into the street scene without forming an obstacle for traffic.

[0014] The public sanitary facility according to the invention is preferably adapted such that the wall stands substantially perpendicularly of the street level in the above-ground position of use thereof. In this embodiment the public sanitary facility can very well be placed close to the wall of a building such that in the position of use the urinal wall extends parallel to the wall of the building. The public sanitary facility according to the invention will also not then form an obstacle for traffic in the position of use.

[0015] The invention will now be discussed in more detail with reference to the drawings, in which

Figure 1 shows a schematic cross-section of a preferred embodiment of a sanitary facility according to the invention in the position of use;

Figure 2 shows a schematic cross-section of the sanitary facility of figure 1 in rest position.

Figure 3 shows a schematic cross-section of the sanitary facility of figure 1 in a position between the rest position and the position of use; and

Figure 4 shows a schematic top view with broken-away parts of the sanitary facility of figure 2.

[0016] Figure 1 shows a schematic cross-section of a sanitary facility according to the invention in the form of a urinal 1 in a first preferred embodiment.

[0017] Urinal 1 has a housing 2 intended for placing

underground. The height of housing 2 is less than the generally usual depth for placing of underground conduits. In the Netherlands this depth amounts to about 40 to 50 cm. Housing 2 can further take any suitable form. The shown rectangular form of receptacle is for instance very suitable, but serves only by way of illustration.

[0018] A wall 3 adapted to collect urine is mounted on housing 2. The wall is pivotable between the shown above-ground position of use and an underground rest position as shown in figure 2. In the above-ground position of use the urinal wall stands substantially perpendicularly of street level S. In the underground rest position the upper side 3b of the urinal wall lies substantially parallel to street level S. Wall 3 hereby also serves in advantageous manner as cover for closing the housing. Wall 3 is provided with a finish on the side 3b visible in the rest position. This finish preferably corresponds with the appearance of the pavement at that position, so that cover 3 can be integrated inconspicuously into the pavement. For the sake of clarity the figures show urinal 1 without this finish.

[0019] Urinal 1 is provided with a floor consisting of two parts 10A and 10B. Parts 10A and 10B are connected by means of hinge 10C. Part 10B is connected to housing 2 by means of a hinge 23. The same hinge 23 connects wall 3 to housing 2. Floor part 10B is fixedly connected to wall 3. Floor part 10A is provided at one outer end with guide means 11, for instance guide rollers. Housing 2 takes an at least partially hollow form and is provided with a rail 22 for guiding the rollers 11.

[0020] Wall 3 can be a urinal wall as described in the above stated Netherlands patent. In the shown preferred embodiment however, the interior 30 of wall 3 is provided with one or more walk-in positions. Each walk-in position has a base 10B and a urine basin 4 which can be connected to the sewage system by means of a waste pipe 6. In the shown preferred embodiment urinal 1 has one walk-in position. The number of walk-in positions can however be increased, for instance to two. The design of the interior 30 of wall 3 preferably corresponds to the design of the housing of the public sanitary facility described in European patent 1232313 of the same applicant. This housing has generally cylindrical features with semicircular forms.

[0021] The interior 30 thus takes an at least partially hollow form. Received therein are a pair of mounting shoes 31, each serving as point of engagement for the drive, which comprises a pair of hydraulic cylinders 13. Hydraulic cylinders 13 further each support in hollow housing 2, preferably on the rear wall thereof.

[0022] Figure 3 illustrates the movement made by urinal 1 from the rest position to the position of use, and vice versa. It can be clearly seen that cylinders 13 push wall 3 upward and herein co-displace the fixed floor part 10B. Floor part 10A is automatically co-displaced here by hinge 10C and is guided upward along rails 22.

[0023] In the position of use the floor is supported on the front side by roller guides 11 which rest on the hori-

zontal part of rail 22, and on the rear side at the position of hinge 23. Cylinders 13 support the floor indirectly by supporting wall 3.

[0024] During the reverse movement (from position of use to rest position) cylinders 13 pull wall 3 with floor part 10B downward and herein force co-displacement of floor part 10A.

[0025] The operation of the movement of the wall can take place both manually and automatically. In both embodiments it is important that the operative has a clear overall view of the situation at the particular location before placing the urinal in the position of use or the rest position, so as to avoid hazardous situations for bystanders.

[0026] Figure 4 shows a schematic top view of urinal 1 in the rest position of figure 2. Wall 3 has been omitted for the sake of clarity. Drainage means 6 can preferably be connected by means of a connection 7 to a sewage system at the location. An electrical connection 8 connectable to the local mains electricity provides the necessary electric power. Lighting 5 is preferably arranged in the urinal, for instance by means of LEDs.

[0027] Further provided is a water connection 9 which connects the urinal to the local water supply system. Spray nozzles 12 for cleaning the urinal are incorporated in floor part 10A. The spray nozzles are activated automatically during movement of urinal 1 from the rest position to the position of use. Spray nozzles 12 are preferably controlled for a predetermined period of time using a time switch. Since floor part 10A moves relative to wall 3, spray nozzles 12 likewise move relative to interior 30, whereby an excellent cleaning can take place.

[0028] Diverse materials are suitable for the sanitary facility according to the invention, including metal (in particular stainless steel) and plastic.

[0029] It is expressly noted that the invention is not limited to the described and shown preferred embodiment. The invention extends generally to any embodiment which falls within the scope of the appended claims as seen in the light of the description and the accompanying drawings.

Claims

1. Public sanitary facility, comprising a housing intended for placing underground, and a wall adapted to collect urine, which wall is mounted on the housing for pivoting between an underground rest position and an above-ground position of use, **characterized in that** the housing also comprises a floor which is movable between a rest position, in which the floor is situated in the housing, and a position of use in which the floor is situated substantially parallel to street level.
2. Public sanitary facility as claimed in claim 1, wherein the sanitary facility is adapted for simultaneous

movement of the floor and pivoting of the wall.

3. Public sanitary facility as claimed in claim 1 or 2, wherein the floor comprises at least two floor parts which are pivotally connected. 5
4. Public sanitary facility as claimed in claim 3, wherein a first floor part is provided with guide means, and wherein a guide rail is arranged in the housing for guiding the guide means. 10
5. Public sanitary facility as claimed in claim 3 or 4, wherein a second floor part is mounted fixedly on the wall. 15
6. Public sanitary facility as claimed in any of the foregoing claims, wherein means for cleaning the sanitary facility are arranged in the floor.
7. Public sanitary facility as claimed in any of the foregoing claims, wherein the floor serves in the position of use as closing element of the housing. 20
8. Public sanitary facility as claimed in any of the foregoing claims, wherein the wall is provided with one or more walk-in positions, each with a receptacle for human excrement and/or urine, which is connected to a waste pipe for connection to a sewage system. 25
9. Public sanitary facility as claimed in any of the foregoing claims, wherein one of the sides of the wall is situated during operation substantially parallel to street level in the underground rest position. 30
10. Public sanitary facility as claimed in any of the foregoing claims, wherein the wall stands substantially perpendicularly of the street level in the above-ground position of use. 35

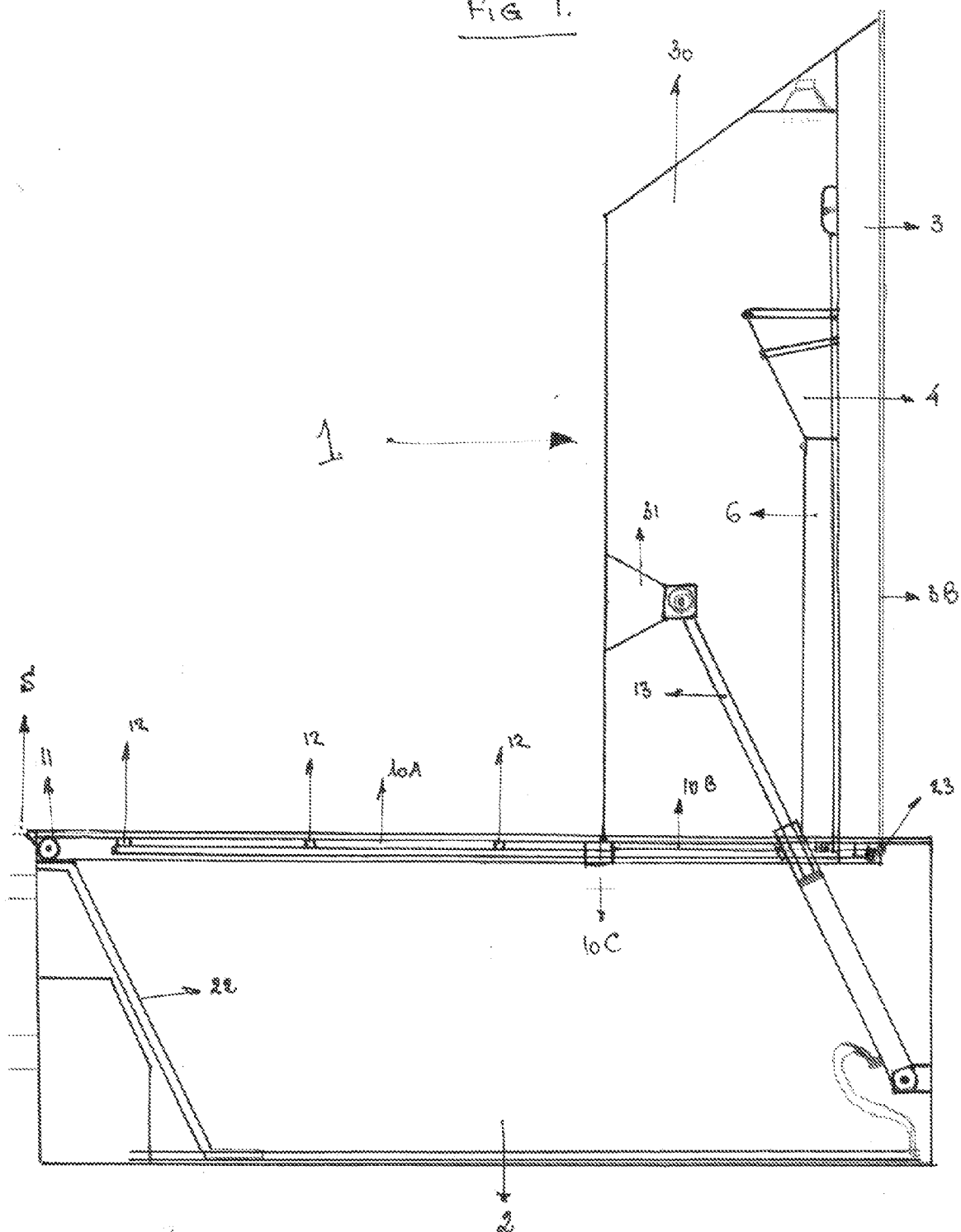
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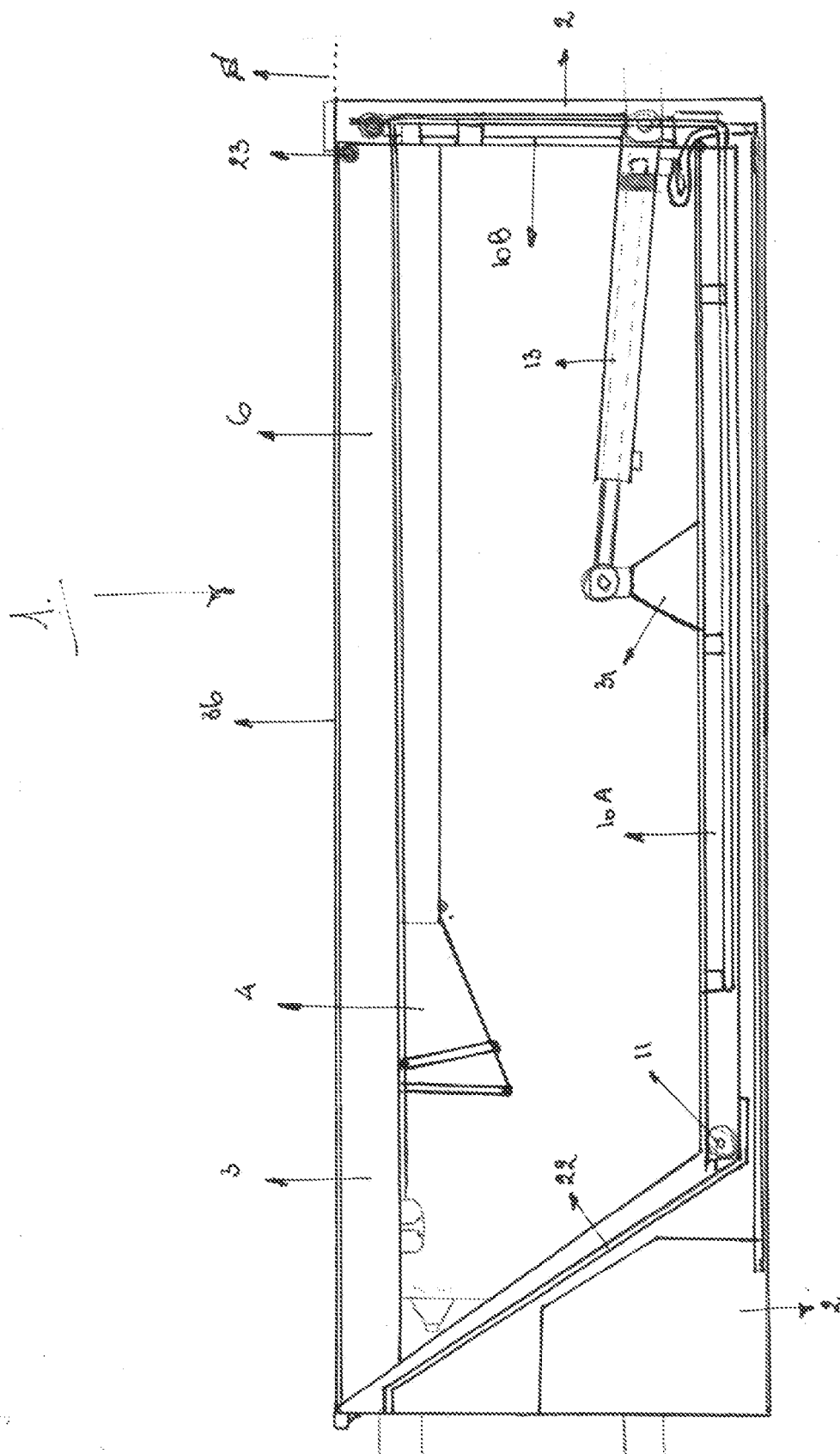
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Fig. 1.



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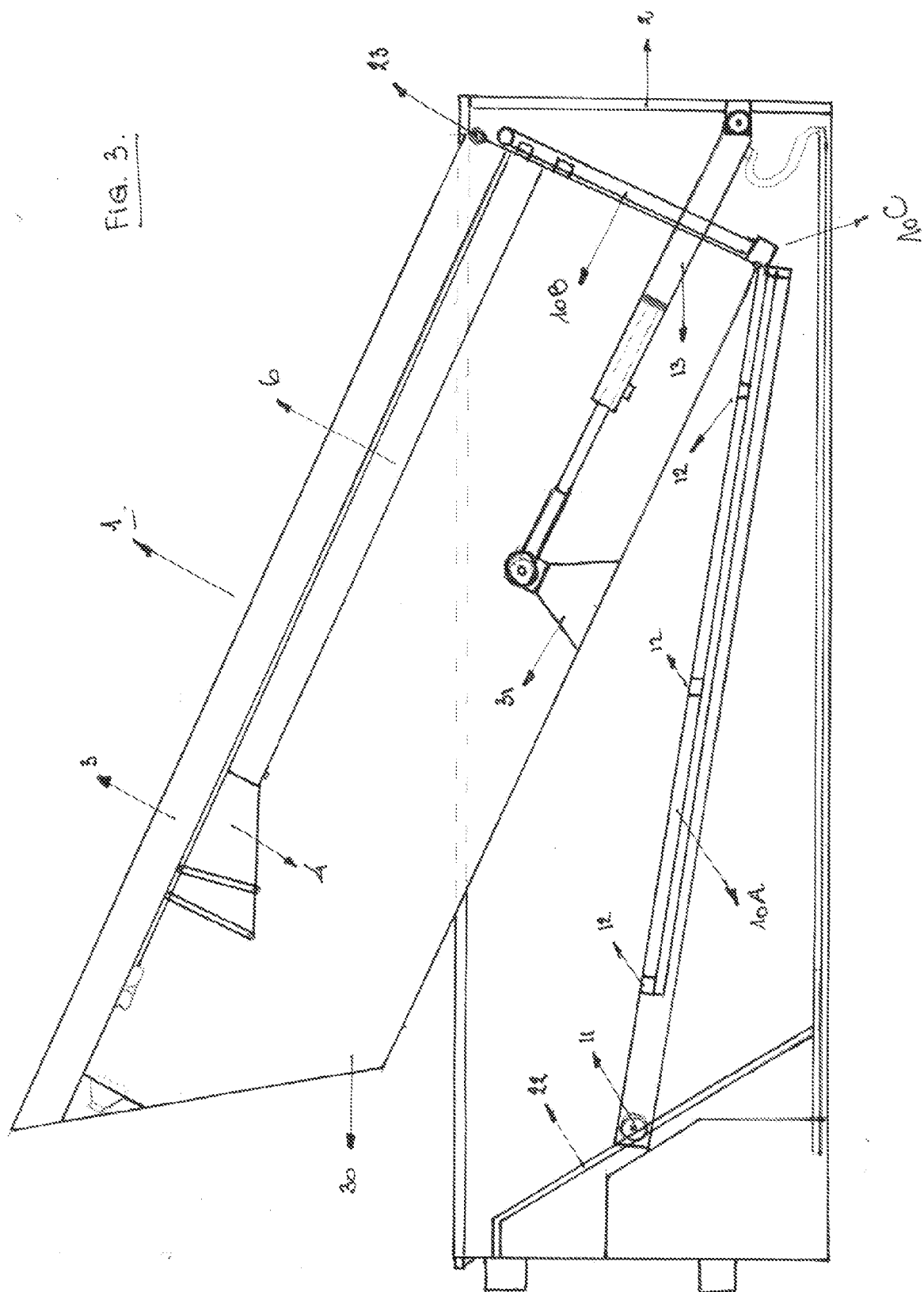
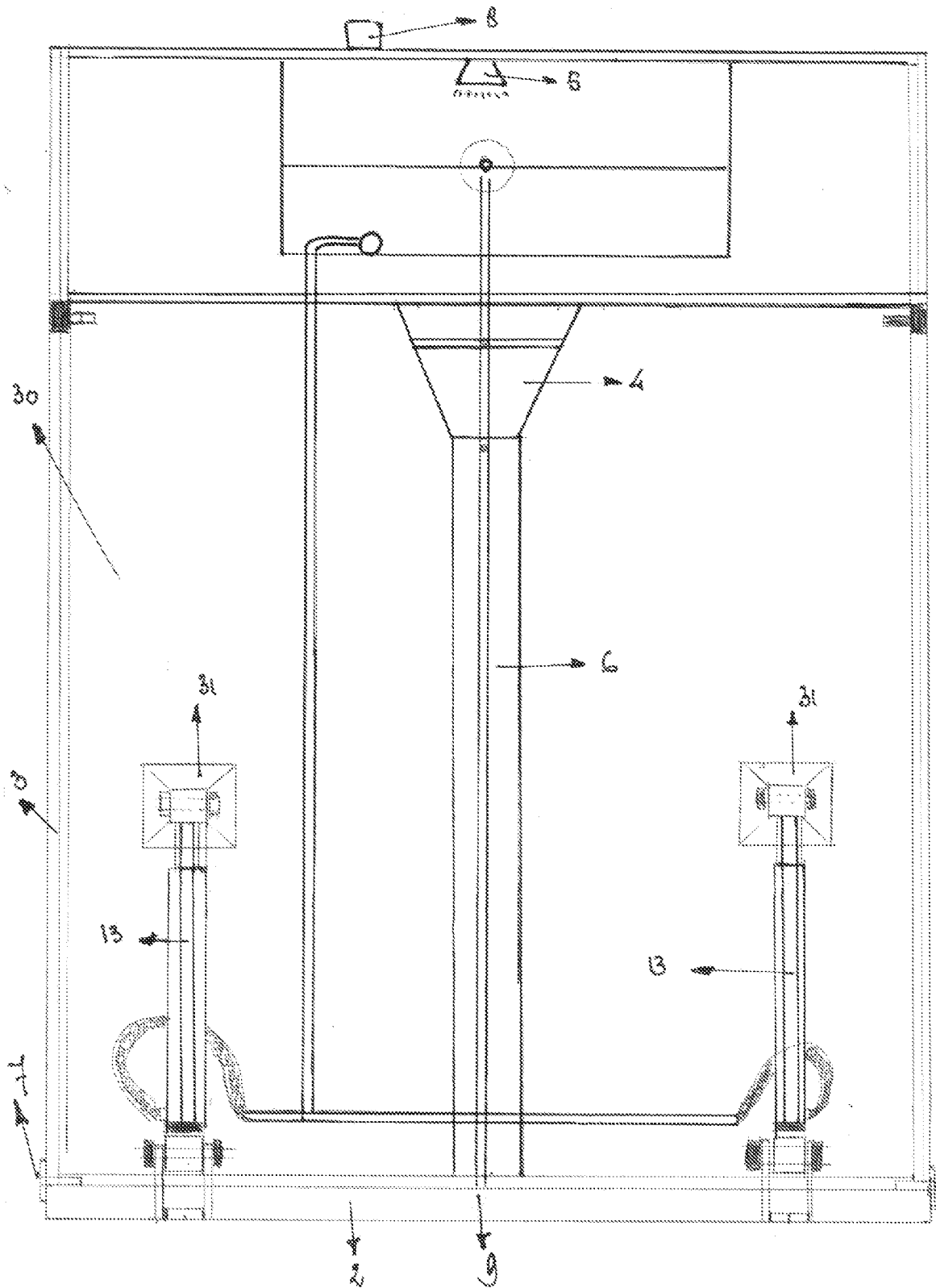


FIG. 4.





EUROPEAN SEARCH REPORT

Application Number
EP 09 17 1307

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	JP 11 089749 A (NIPPON OKUGAI ZOKEI KK) 6 April 1999 (1999-04-06) * abstract; figures *	1,2,7,9,10	INV. E03D13/00 E03D7/00
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			TECHNICAL FIELDS SEARCHED (IPC)
			E03D E04H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 11 January 2010	Examiner Urbahn, Stephanie
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 17 1307

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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11-01-2010

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Patent documents cited in the description

- NL 1032131 [0002]
- EP 1232313 A [0020]